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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,760	10/23/2003	Annette C. Grot	10004268-1	6707

57299 7590 01/24/2007
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EXAMINER

WANG, QUAN ZHEN

ART UNIT	PAPER NUMBER
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2613

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/691,760

Applicant(s)

GROT ET AL.

Examiner

Quan-Zhen Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to because the drawings do not correctly illustrate the signal flow. For example, element 64 is a reflector that is a passive element. But the drawing shows that there are signals originated from the passive element 64. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

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2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. For example, the terms of "absolute frequency" and "non-absolute frequency" are not defined "with reasonable clarity, deliberateness, and precision" and set out Applicant's uncommon definition in a manner within the patent disclosure.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-5, 8, and 11-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 1, 11, and 13 recite the limitation of "... having channels with mutually-identical frequency differences". However, for any non-zero frequency differences, it is impossible to for channels to have "mutually-identical frequency differences". It is simply against the law of nature.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation of "The method of claim 1, in which the channels of the multi-channel device provided to at least some of the nodes differ in absolute frequency prior to the tuning." It is not clear what the cited limitation means. In addition, there is insufficient antecedent basis for the limitation of "the tuning".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-5, and 7-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over lida et al. (U.S. Patent Application Publication US 2002/0075539 A1) in view of Vujkovic-Cvijin et al. (U.S. Patent Application Publication US 2003/0039015 A1).

Regarding claims 1, 9, 13, and 18, lida discloses an optical communication network (fig. 6) in which interoperable optical frequencies are defined without an absolute frequency reference, the network comprising: means for distributing a non-absolute frequency reference to nodes of the network (paragraph 0212). lida differs from the claimed invention in that lida does not specifically disclose that a tunable multi-

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channel device generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference. However, a tunable multi-channel device generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference is well known in the art. For example, Vujkovic-Cvijin discloses a tunable multi-channel device (figs. 2-3) generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference (fig. 4, reference 404). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a tunable multi-channel device generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference, as it is disclosed by Vujkovic-Cvijin, in the system of lida in order to reconfigure the frequencies of the channels.

Regarding claim 2, and claim 14, lida further discloses exchanging optical information signals between two or more of the nodes at a frequency aligned with another of the channels of the tunable multi-channel device (fig. 6).

Regarding claim 3, as it is understood in view of the above 112 problem, Vujkovic-Cvijin further discloses the channels of the multi-channel device provided to at least some of the nodes differ in absolute frequency prior to the tuning (fig. 4).

Regarding claims 4-5 and 19-20, lida further disclose that the frequency of a channel from a transmitter and the frequency of the corresponding channel in a receiver are tuned to mach each other (fig. 6).

Regarding claim 7, Vujkovic-Cvijin further discloses providing to the nodes non-absolute frequency reference artifacts defining an identical frequency (fig. 2, reference gas).

Regarding claims 8 and 10, lida further disclose broadcasting a non-absolute frequency reference signal to the nodes (paragraph 0212).

Regarding claims 11 and 12, Vujkovic-Cvijin further discloses locating the tunable multi-channel device at one of the nodes (fig. 2-5); the channels of all the tunable multi-channel devices having fixed channel spacing (fig. 4); distributing the non-absolute frequency reference to each of the nodes and at each of the nodes, frequency aligning one of the channels of the multi-channel device thereat with the non-absolute frequency reference (fig. 4, reference 404).

Regarding claim 15, and claim 16, Vujkovic-Cvijin further discloses a light source; and a channel selector operable to align the light source in frequency with the other of the channels of the multi-channel device (figs. 2-3).

Regarding claim 17, Vujkovic-Cvijin further discloses the multi-channel device comprises a Fabry-Perot etalon (fig. 5, etalon 512) comprising a cavity, the cavity having a length; and each of the nodes comprises a control circuit operable to tune the etalon by adjusting length of the cavity of the etalon in response to a feedback signal

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indicative of a frequency difference between a resonance node of the etalon and the non-absolute frequency reference (fig. 5; paragraph 0054-0064).

Regarding claim 21, Vujkovic-Cvijin further discloses each of the nodes additionally comprises a channel selector (fig. 5, 530) operable to frequency align the one or more frequencies at which the transceiver is operable to transmit and/or receive the optical information signals with respective ones of the channels of the tunable multi-channel device thereat (paragraph 0054-0064).

Response to Arguments

9. Applicant's arguments filed December 14, 2006 have been fully considered but they are not persuasive.

10. Applicant claims that claims 3 and 6 have been cancelled in the "Remarks", but only claim 6 is "cancelled" from the claim list. Claim 3 is classified as "original" in the claim list. Therefore, claim 3 is still treated as an un-cancelled claim.

11. Applicant has corrected the examples of some unclear, inexact or verbose terms used in the claims that were pointed out by Examiner in the previous Office Action. However, Applicant has not corrected unclear, inexact or verbose terms used in the specification. Applicant argues that "The Applicants are allowed to be their own lexicographers". However, any the term that is different from its ordinary and customary meaning(s) must be defined "with reasonable clarity, deliberateness, and precision"

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and, if done, must “set out his uncommon definition in some manner within the patent disclosure’ so as to give one of ordinary skill in the art notice of the change” in meaning (MPEP §2111.02). For the instant case, Applicant does not provide definitions for terms different from its ordinary and customary meanings, such as “absolute frequency” and “non-absolute frequency”, “with reasonable clarity, deliberateness, and precision”.

12. In regard with the rejection of claims 1-5, 8, and 11-17 under 35 U.S.C. 112, first paragraph, Applicant claims that “The meaning of the claim language recited by the Examiner is well described in the specification”, and claims the sections 0029 and 0030 of the specification support the meaning of the claim language. However, nowhere does the sections 0029 and 0030 disclose that the channels with “mutually-identical frequency difference”. As it is pointed out by Examiner, “for any non-zero frequency differences, it is impossible (to) for channels to have “mutually-identical frequency differences”. It is simply against the law of nature.” For example, for a system with 3 channels: ch1, ch2, and ch3, if the frequency difference between ch1 and ch2 is Δ , and the frequency difference between ch2 and ch3 is also Δ , the frequency difference between ch1 and ch3 would be 2Δ . It is obvious that $\Delta \neq 2\Delta$, unless $\Delta=0$.

13. In regard with the rejections of claims under 35 U.S.C. §103, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). For the

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instant case, lida discloses an optical communication network (fig. 6) in which interoperable optical frequencies are defined without an absolute frequency reference, the network comprising: means for distributing a non-absolute frequency reference to nodes of the network (paragraph 0212). lida differs from the claimed invention in that lida does not specifically disclose that a tunable multi-channel device generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference. However, a tunable multi-channel device generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference is well known in the art. For example, Vujkovic-Cvijin discloses a tunable multi-channel device (figs. 2-3) generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference (fig. 4, reference 404). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a tunable multi-channel device generating channels with fixed channels spacing, and a control circuit operable to frequency align one of the channels of the multi-channel device thereat with the non-absolute frequency reference, as it is disclosed by Vujkovic-Cvijin, in the system of lida in order to reconfigure the frequencies of the channels.

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14. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Vujkovic-Cvijin clearly discloses to reconfigure the frequencies of the channels in the communication system.

15. For the above reasons, the rejections of claims 1-5, and 7-17 still stand.

16. Applicant is quite about the drawing objection and has not provided corrected drawings, therefore, the drawing objection still stands.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571) 272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

qzw
1/20/2007


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PRIMARY EXAMINER